Jeffrey Neil Houser

U.S. Geological Survey
Upper Midwest Environmental
Sciences Center
2630 Fanta Reed Road
La Crosse, WI 54603

Phone: (608) 781-6262
Fax: (608) 783-6066
email: jhouser@usgs.gov

Education

University of Wisconsin, Madison, WI 53706

2001 Ph.D. Zoology - Dissertation Title: *Dissolved organic carbon in lakes: effects on thermal structure, primary production, and hypolimnetic metabolism.*

1998 M.S. Zoology - Thesis Title: *Food web structure and experimental enrichment: effects on phosphorus sedimentation and retention.*

Wake Forest University, Winston-Salem, NC 27109

1994 B.S. Magna cum Laude and with Honors in Biology

Research Experience and Appointments

October 2004 – present: Adjunct Professor, Department of Biology, University of Wisconsin—La Crosse.

November 2003 – present: Research Ecologist/Limnologist, U.S. Geological Survey Upper Midwest Environmental Sciences Center.

July 2001-November 2003: Postdoctoral Research Associate—Stream Ecology, Oak Ridge National Laboratory. Supervisor: Patrick J. Mulholland.

May 1996 – June 2001: Graduate Research Assistant, Center for Limnology, University of Wisconsin, Madison. Dissertation adviser: Stephen R. Carpenter.

Teaching Experience

University of Wisconsin-Madison Teaching Assistant

1995 Fall semester: Zoology 152 – Ecology and Evolution

1996 Spring semester: Zoology 151 – Cellular and Molecular Biology

Lectures and labs

U. of Wisconsin-La Crosse Limnology class river ecology field trip (BIO 341)

U. of Wisconsin-La Crosse Ecology lecture: Gulf of Mexico “dead zone” (BIO 307)

Viterbo University Limnology class river ecology field trip (BIO 310)

Research Interests

Aquatic ecology, large rivers, streams, lakes, ecosystem metabolism, carbon and nutrient cycling, biogeochemistry, food webs, applied ecology, ecological modeling

Professional Societies

American Society of Limnology and Oceanography; Ecological Society of America; North American Benthological Society

Professional Service

Reviewed manuscripts for the following journals: Ecosystems, Ecological Applications, Fisheries, Hydrobiologia, Journal of Environmental Management, Journal of Environmental Quality, Journal of Paleolimnology, Journal of Geophysical Research – Biogeosciences, Journal of the North American Benthological Society, Limnology and Oceanography, Science of the Total Environment

Recent Funding

US Army Corps of Engineers/US Geological Survey Long Term Resource Monitoring Project Additional Program Expenditure. 2009. The effects of river nutrient concentrations on metaphyton, submersed aquatic vegetation and dissolved oxygen across a connectivity gradient. Amount: $114,120.

US Army Corps of Engineers/US Geological Survey Long Term Resource Monitoring Project Additional Program Expenditure. 2007. Primary production in the UMRS: Contrasts in dissolved oxygen dynamics, primary production, and respiration among aquatic areas of the Upper Mississippi River System. Amount: $105,000.

US Army Corps of Engineers/US Geological Survey Long Term Resource Monitoring Project Additional Program Expenditure. 2006. Title: Vegetation, primary production, and dissolved oxygen dynamics in UMRS backwater lakes. Amount: $90,000.

Invited Seminars

Houser, J.N. The Upper Mississippi River Ecosystem: What can we learn from spatial and temporal patterns in nitrogen and phosphorus? Fairfield University, Fairfield, Connecticut. March 18, 2010.

Houser, J.N. The temporal and spatial patterns of algal abundance and nutrient concentrations in the Mississippi River: implications for monitoring algae in large rivers. Given at the following: Seminar on Aquatic Biological Resources Conservation of East China Sea and Yangtze River. Shanghai, China. May 8, 2008; Advanced Training Course on Yangtze River Fishery Resources and Environmental Monitoring Technology. Chongqing, China. May 9 2008; and Freshwater Ecosystems Monitoring Seminar. Beijing, China. May 17, 2008

Houser, J.N. Overview of the Long Term Resources water quality component – the network of field stations, spatial and temporal sampling design, data capture, delivery and usage. Aquatic Ecosystems Monitoring and Protection Seminar. Wuhan, China. May 14, 2008.

Houser, J.N., W.B. Richardson. Nutrients in the Upper Mississippi River: Transport, processing, and effects on the river. Mississippi River Research Consortium 40th Annual Meeting. Dubuque, Iowa. April 24-25, 2008.

Houser, J.N. Nutrients, chlorophyll, and suspended sediment in the Upper Mississippi River: Patterns in time and space. U.S. Environmental Protection Agency Science Symposium: Sources, Transport, and Fate of Nutrients in the Mississippi and Atchafalaya River Basins. Minneapolis, MN. November 7-9, 2006.

Houser, JN., B.S. Ickes, B. Knights. Using monitoring data to increase our understanding of the UMRS and inform decisions about its management. Upper Mississippi River Conservation Committee Annual Meeting. Hannibal, MO. March 14-15, 2006 (Co-presented with B.S. Ickes).

Houser, J.N. Suspended sediments and sedimentation in the Upper Mississippi River System. Upper Mississippi River Basin Association Water Quality Task Force Meeting. Rock Island, IL. November 2-3, 2005.

Houser, J. N., P.J. Mulholland and K.O. Maloney. Watershed land use affects primary production, community respiration, and nutrient cycling in streams: Results of a comparative study of streams at Ft. Benning, Georgia. Thirteenth Tennessee Water Resources Symposium, American Water Resources Association. Nashville, Tennessee. April 9-11, 2003.

Houser, J.N. Inputs of terrestrial dissolved organic carbon, nutrients, and sediment affect the physics, chemistry and biology of aquatic systems: Examples from Wisconsin lakes and Georgia streams. United States Geological Survey. Reston, Virginia. June 25, 2002.

Publications

Houser, J.N., D.W. Bierman, R.M. Burdis, and L.A. Soeken-Gittinger. In press. Longitudinal trends and discontinuities in nutrients, chlorophyll and suspended solids in the Upper Mississippi River: implications for transport, processing, and export by large rivers. Hydrobiologia.

Gray, B.R., W. Shi, J.N. Houser, J.T. Rogala, Z. Guan, and J.L. Cochran-Biederman. In press. Cumulative effects of restoration efforts on ecological characteristics of an open water area within the Upper Mississippi River. River Research and Applications.

Houser, J.N. and Richardson, W.B. 2010. Nitrogen and phosphrous in the Upper Mississippi River: transport, processing, and effects on the river ecosystem. Hydrobiologia 640:71-88.

Maloney, K.O., J.W. Feminella, R.M. Mitchell, S.A. Miller, P.J. Mulholland, and **J.N. Houser**. 2008. Landuse legacies and small streams: identifying relationships between historical land use and contemporary stream conditions. Journal of the North American Benthological Society 27:280-294.

Houser, J.N. 2006. Water color affects the stratification, surface temperature, heat content, and mean epilimnetic irradiance of small lakes. Canadian Journal of Fisheries and Aquatic Sciences 63:2447-2455.

Roberts, B.J., P.J. Mulholland, and **J.N. Houser**. 2006. Effects of upland disturbance and instream restoration on hydrodynamics and ammonium uptake in headwater streams. Journal of the North American Benthological Society 26:38-53.

Houser, J.N., P.J. Mulholland, and K.O. Maloney. 2006. Upland disturbance affects headwater stream nutrients and suspended sediments during baseflow and stormflow. Journal of Environmental Quality 35:352–365.

Houser, J.N., P.J. Mulholland, and K.O. Maloney. 2005. Catchment disturbance and stream metabolism: patterns in ecosystem respiration and gross primary production along a gradient of upland soil and vegetation disturbance. Journal of the North American Benthological Society 24:538-552.

Mulholland, P.J., **J.N. Houser**, and K.O. Maloney. 2005. Stream diurnal dissolved oxygen profiles as indicators of in-stream metabolism and disturbance effects: Fort Benning as a case study. Ecological Indicators 5:243-252.

Houser, J.N., D.L. Bade, J.J. Cole, M.L. Pace. 2003. The dual influences of dissolved organic carbon on hypolimnetic metabolism: organic substrate and photosynthetic inhibition. Biogeochemistry 64:247-269.

Essington, T.E. and **J.N. Houser**. 2003. The Effect of Whole-Lake Nutrient Enrichment on Mercury Concentration in Age- 1 Yellow Perch. Transactions of the American Fisheries Society 132:57-68.

Carpenter, S.R., J.J. Cole, J.R. Hodgson, J.F. Kitchell, M.L. Pace, D. Bade, K.L. Cottingham, T.E. Essington, **J.N. Houser** and D.E. Schindler. 2001. Trophic cascades, nutrients and lake productivity: experimental enrichment of lakes with contrasting food webs. Ecological Monographs 71:163-186.

Houser, J.N., S.R. Carpenter, J.J. Cole. 2000. Food web structure and nutrient enrichment: effects on sediment phosphorus retention in whole-lake experiments. Canadian Journal of Fisheries and Aquatic Sciences 57:1524-1533.

Bennett, E. M., T. Reed-Andersen, **J.N. Houser**, J.R. Gabriel, S.R. Carpenter. 1999. A phosphorus budget for the Lake Mendota watershed. Ecosystems 2:69-75.

Carpenter, S.R., J.J. Cole, T.E. Essington, J.R. Hodgson, **J.N. Houser**, J.F. Kitchell, and M.L. Pace. 1998. Evaluating alternative explanations in ecosystem experiments. Ecosystems 1: 335-344.

Browne, R.A., D.J. Anderson, **J.N. Houser**, F. Cruz, K.J. Glasgow, C.N. Hodges, G. Massey. 1997. Genetic diversity and divergence of endangered Galapagos and Hawaiian Petrel populations. The Condor 99:812-815.

Reports

Houser, J.N. 2008. Water quality indicators. *In* Johnson, B.L. and K.H. Hagerty, editors. Status and Trends of Selected Resources of the Upper Mississippi River System. U.S. Geological Survey, Upper Midwest Environmental Sciences Center, La Crosse, Wisconsin, December 2008. Technical Report LTRMP 2008-T002. p. 30 – 40.

Houser, J. N., editor. 2005. Multiyear synthesis of limnological data from 1993 to 2001 for the Long Term Resource Monitoring Program. U.S. Geological Survey, Upper Midwest Environment Sciences Center, La Crosse, Wisconsin, March 2005. LTRMP Technical Report 2005-T003. 59 pp. (NTIS PB2005-105228)